

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: P473815

Luminaire Tested: **24CZ2-50-UNV-L835-CD1-U**

Issue Date: 01/28/2021

Test Information

Test Method: LM-79-08
Report Number: P473815
Test Lab: INNOVATION CENTER(G3)
Issue Date: 01/28/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 24CZ2-50-UNV-L835-CD1-U
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

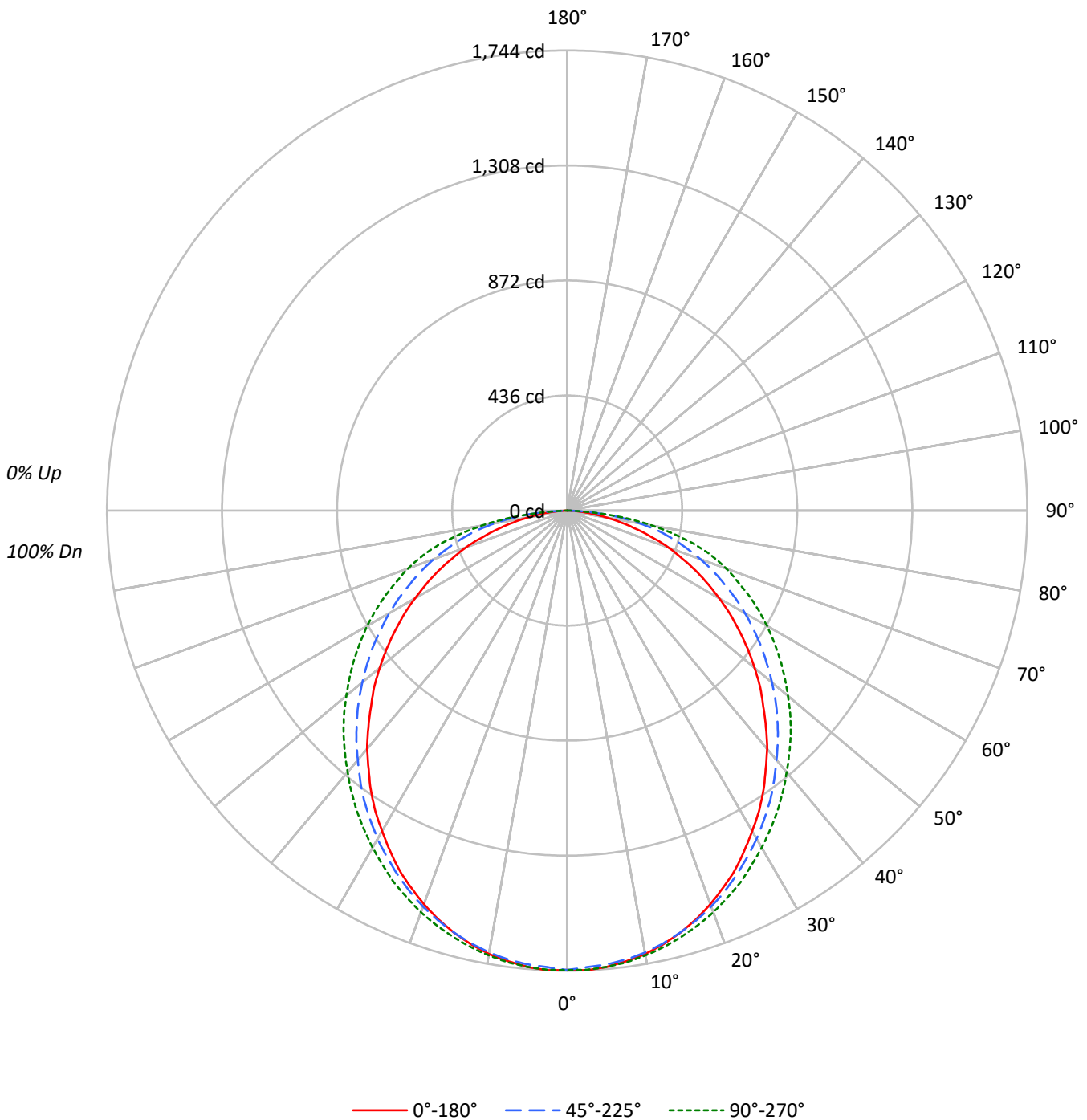
Lumens per Lamp: N/A
Luminaire Lumens: 5038.9 lumens
Efficiency: N/A
Efficacy: 126.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.36
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 39.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 20 | |
| RC | 80 | | | | 70 | | | | 50 | | | | 30 | | | | 10 | 0 |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 108 | 103 | 99 | 95 | 105 | 101 | 97 | 93 | 97 | 93 | 90 | 93 | 90 | 87 | 89 | 87 | 85 | 83 |
| 2 | 98 | 89 | 82 | 76 | 95 | 88 | 81 | 75 | 84 | 78 | 74 | 81 | 76 | 72 | 78 | 74 | 70 | 68 |
| 3 | 89 | 78 | 70 | 63 | 87 | 77 | 69 | 63 | 74 | 67 | 61 | 71 | 65 | 60 | 68 | 63 | 59 | 57 |
| 4 | 82 | 69 | 60 | 53 | 79 | 68 | 59 | 53 | 65 | 58 | 52 | 63 | 57 | 51 | 61 | 55 | 51 | 48 |
| 5 | 75 | 62 | 53 | 46 | 73 | 61 | 52 | 46 | 58 | 51 | 45 | 56 | 50 | 44 | 55 | 49 | 44 | 42 |
| 6 | 69 | 56 | 46 | 40 | 67 | 55 | 46 | 40 | 53 | 45 | 39 | 51 | 44 | 39 | 49 | 43 | 39 | 37 |
| 7 | 64 | 50 | 41 | 35 | 62 | 50 | 41 | 35 | 48 | 40 | 35 | 47 | 40 | 35 | 45 | 39 | 34 | 32 |
| 8 | 60 | 46 | 37 | 31 | 58 | 45 | 37 | 31 | 44 | 36 | 31 | 43 | 36 | 31 | 41 | 35 | 31 | 29 |
| 9 | 56 | 42 | 34 | 28 | 54 | 42 | 34 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 |
| 10 | 52 | 39 | 31 | 26 | 51 | 38 | 31 | 26 | 37 | 30 | 25 | 36 | 30 | 25 | 36 | 30 | 25 | 23 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 2343 | 2343 | 2343 |
| 5° | 2344 | 2332 | 2344 |
| 10° | 2331 | 2323 | 2339 |
| 15° | 2308 | 2306 | 2329 |
| 20° | 2273 | 2287 | 2320 |
| 25° | 2233 | 2259 | 2308 |
| 30° | 2179 | 2232 | 2292 |
| 35° | 2130 | 2204 | 2282 |
| 40° | 2072 | 2168 | 2273 |
| 45° | 2001 | 2145 | 2280 |
| 50° | 1941 | 2121 | 2287 |
| 55° | 1870 | 2106 | 2312 |
| 60° | 1792 | 2097 | 2355 |
| 65° | 1708 | 2089 | 2415 |
| 70° | 1608 | 2111 | 2527 |
| 75° | 1413 | 2154 | 2628 |
| 80° | 1179 | 2170 | 2536 |
| 85° | 841 | 1860 | 1885 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 164.6 | 3.3 |
| 10°-20° | 468.9 | 9.3 |
| 20°-30° | 703.4 | 14.0 |
| 30°-40° | 839.8 | 16.7 |
| 40°-50° | 869.8 | 17.3 |
| 50°-60° | 800.8 | 15.9 |
| 60°-70° | 645.9 | 12.8 |
| 70°-80° | 422.0 | 8.4 |
| 80°-90° | 123.7 | 2.5 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-30° | 1336.8 | 26.5 |
| 0°-40° | 2176.6 | 43.2 |
| 0°-60° | 3847.2 | 76.3 |
| 0°-90° | 5038.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5038.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1741 | 1741 | 1741 | 1741 | 1741 | |
| 5° | 1736 | 1734 | 1727 | 1736 | 1736 | 165 |
| 15° | 1657 | 1657 | 1656 | 1672 | 1672 | 467 |
| 25° | 1504 | 1508 | 1522 | 1549 | 1555 | 692 |
| 35° | 1297 | 1308 | 1342 | 1378 | 1390 | 810 |
| 45° | 1052 | 1078 | 1128 | 1178 | 1198 | 813 |
| 55° | 797 | 831 | 898 | 964 | 986 | 713 |
| 65° | 536 | 573 | 656 | 731 | 759 | 530 |
| 75° | 272 | 323 | 414 | 486 | 506 | 290 |
| 85° | 54 | 94 | 120 | 128 | 122 | 68 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P473815

CATALOG NUMBER: 24CZ2-50-UNV-L835-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1741.3 | 1741.3 | 1741.3 | 1741.3 | 1741.3 |
| 2.5° | 1743.7 | 1741.3 | 1732.3 | 1742.9 | 1742.1 |
| 5° | 1735.6 | 1733.9 | 1726.6 | 1736.4 | 1735.6 |
| 7.5° | 1722.5 | 1721.7 | 1716.0 | 1726.6 | 1726.6 |
| 10° | 1706.3 | 1704.6 | 1700.6 | 1712.8 | 1712.0 |
| 12.5° | 1683.5 | 1682.7 | 1680.2 | 1694.9 | 1694.0 |
| 15° | 1656.6 | 1656.6 | 1655.8 | 1672.1 | 1672.1 |
| 17.5° | 1624.0 | 1624.9 | 1628.1 | 1646.8 | 1647.6 |
| 20° | 1587.4 | 1590.7 | 1597.2 | 1618.3 | 1620.0 |
| 22.5° | 1545.9 | 1552.4 | 1561.4 | 1585.0 | 1587.4 |
| 25° | 1504.4 | 1507.6 | 1521.5 | 1549.1 | 1554.8 |
| 27.5° | 1453.9 | 1462.0 | 1480.0 | 1508.4 | 1514.1 |
| 30° | 1402.6 | 1414.0 | 1436.8 | 1466.1 | 1475.1 |
| 32.5° | 1352.1 | 1361.9 | 1388.8 | 1422.2 | 1432.7 |
| 35° | 1296.8 | 1308.2 | 1341.6 | 1378.2 | 1389.6 |
| 37.5° | 1235.7 | 1253.6 | 1288.6 | 1331.0 | 1343.2 |
| 40° | 1179.6 | 1195.8 | 1234.1 | 1281.3 | 1294.3 |
| 42.5° | 1115.3 | 1135.6 | 1182.0 | 1230.0 | 1246.3 |
| 45° | 1051.8 | 1077.8 | 1127.5 | 1177.9 | 1198.3 |
| 47.5° | 992.3 | 1013.5 | 1072.1 | 1129.1 | 1147.0 |
| 50° | 927.2 | 951.6 | 1013.5 | 1073.7 | 1092.5 |
| 52.5° | 862.9 | 892.2 | 954.9 | 1018.4 | 1038.7 |
| 55° | 797.0 | 831.2 | 897.9 | 963.8 | 985.8 |
| 57.5° | 733.5 | 767.7 | 836.8 | 906.9 | 929.7 |
| 60° | 665.9 | 702.5 | 779.1 | 846.6 | 875.1 |
| 62.5° | 600.8 | 637.4 | 718.0 | 791.3 | 818.1 |
| 65° | 536.5 | 573.1 | 656.1 | 731.0 | 758.7 |
| 67.5° | 469.7 | 509.6 | 598.3 | 670.8 | 697.6 |
| 70° | 408.7 | 446.9 | 536.5 | 613.8 | 642.3 |
| 72.5° | 338.6 | 384.2 | 475.4 | 551.9 | 578.8 |
| 75° | 271.9 | 323.2 | 414.4 | 486.0 | 505.5 |
| 77.5° | 210.0 | 261.3 | 352.5 | 406.2 | 418.4 |
| 80° | 152.2 | 204.3 | 280.0 | 317.5 | 327.3 |
| 82.5° | 98.5 | 152.2 | 202.7 | 227.9 | 231.2 |
| 85° | 54.5 | 94.4 | 120.5 | 127.8 | 122.1 |
| 87.5° | 19.5 | 35.8 | 35.0 | 28.5 | 22.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)